



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,150	06/08/2001	Heui-jong Kang	1293.1217	6721
49455	7590	03/13/2006	EXAMINER	
STEIN, MCEWEN & BUI, LLP 1400 EYE STREET, NW SUITE 300 WASHINGTON, DC 20005			DANG, DUY M	
			ART UNIT	PAPER NUMBER
			2627	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/876,150	Applicant(s) KANG ET AL.	
	Examiner Duy M. Dang	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 January 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 2-10 and 12-30 is/are allowed.
- 6) Claim(s) 1 and 11 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

5

DETAILED ACTION

1. Applicant's amendment filed 1/5/06 has been entered and made of record.

Response to Arguments

2. Applicant's arguments filed 1/5/06 have been fully considered but they are not persuasive.

In response to applicant's arguments with regard to the rejection of claims 1 and 11 under section 35 U.S.C. 103(a) as pointed out in pages 11-12, the examiner disagrees and the reasons as follows:

-In lines 1-11 of page 12 of applicant's arguments, it states:

For Example, the Admitted Prior Art does not teach or suggest an interface unit which "compares a current graphic signal with a previous graphic signal to generate compressed transmission data based on the comparison," and "modulates the transmission data together with header information into an optical signal for transmission via a single channel."

Kawamura et al. disclose an apparatus for encoding compressed moving picture information and audio information onto a DSM 10 (FIG. 1) and decoding compressed moving picture information from the DSM 10 (FIG. 2). The apparatus of FIG. 1 takes in inputs and records data relating to the inputs on the DSM 10. The apparatus of FIG. 2 reproduces information from the DSM 10 and decodes and outputs video with a decoder 25. No mention is made that the encoding apparatus of FIG. 1 is intended to transmit "compressed transmission data" to the decoding apparatus of FIG. 2 via "a single channel," as recited in claim 1.

-In response, it appears that applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

-In lines 12-16 of page 12 of applicant's arguments, it states:

The Admitted Prior Art and the Kawamura et al. are directed to solving different problems. Kawamura et al. make no mention of solving any problems relating to transmission between an interface unit and a display device; thus, a person of ordinary skill in the art at the time the invention was made would not have had an incentive to combine Kawamura et al. and the Admitted Prior Art for a solution to the distance transmission problem.

Art Unit: 2627

-In response, it is noted that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In addition, a prima facie case of obviousness does not require that the prior art references necessarily recognize or even suggest the problem which applicant attempted to solve. See *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990).

-In lines 17-20 of page 12 of applicant's arguments, it states:

Fields et al. is related to multiplexing data streams for transmission via a fiber-optic transport link 124. Fields et al. make no mention that any of the data being transmitted by the transport link is directed to a transmission of a graphic image between a graphic signal generation unit and a display device.

-In response, , it appears that applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In lines 21-26 of page 12 of applicant's arguments, it states:

The Examiner appears to be using the invention as claimed as a template and selecting portions of the prior art which are useable for implementing the invention based on the template; thus, engaging in impermissible hindsight analysis. It is the references themselves and not the applicants disclosure which must suggest the claimed combination. Further, there must be some motivation to combine the teachings of the references other than the motivation taught by the applicants disclosure.

-In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

Art Unit: 2627

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In addition, the combination of references in this rejection of applicant's claims was proper and not motivated by the use of hindsight. See *In re Spooner*, 17 USPQ2d 1731 (CAFC 1990).

-It is noted that the examiner did not rely on a single reference to reject applicant's claimed invention. The rejection of applicant's claims 1 and 11 has been based on the combination of the Applicant's Admitted Prior Art (AAPA), Kawamura et al. (Kawamura) and Fields et al. (Fields). With regard to applicant's claim 1 as a representative claim, and claim 11, figure 1 of the AAPA teaches an apparatus for transmitting (transmission unit 11) a graphic signal generated by a graphic signal generation unit (graphic unit 10) to a display unit (display unit 132) comprising: a transmission interface unit (transmission unit 11) and a reception interface unit (reception unit 12).

The AAPA fails to teach: (1) compares a current graphic signal with a previous graphic signal and compresses the current graphic signal to generate transmission data based on the comparison, modulates the transmission data together with header information into an optical signal for transmission via a single channel, transmits the optical signal; and (2) an optical transmission medium which communicates the transmitted optical signal.

As to (1), Kawamura et al., in the same field of endeavor that of compression, teaches: compares a current graphic signal with a previous graphic signal and compresses the current

Art Unit: 2627

graphic signal to generate compressed transmission data based on the comparison [see col. 2 lines 54-60. Note that difference is the result of the comparison between the two sequential frames (previous and current frames) and is encoded)], modulates the transmission data together with header information into an optical signal for transmission via a single channel [see MOD 53 of figure 7 and col. 4 lines 20-31. Note that the MOD 53 modulates the ECC-encoded data (from ECC encoder 52) which comprises of output signal from header adding circuit 51 and redundant data from ECC encoder 52. Also the header adding circuit 51 may qualify as the claimed modulator]. Kawamura suggest to do so in order to effectively increase the compression efficiency according to column 2 lines 56-57. It is noted that the claimed “graphic signal” is so broad so it is considered to be Kawamura’s picture (i.e., picture mentioned in line 6; I/P/B picture mentioned in col. 2 lines 44-67. See *In re Tanaka et al.*, 193 USPQ, (CCPA) 1977 and *IN re Zletz*, 13 USPQ2d 1320 (CAFC 1989)). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the features as taught by Kawamura in combination with the AAPA for that reasons.

As to (2), the combination of the AAPA and Kawamura fails to such features. However, using optical transmission is well known in the art as evidenced by Fields et al. [see col. 4 lines 35-36 and item 124 of figure 31]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conventional teachings ms taught by Fields et al in combination with the AAPA in order to allow faster transmission as suggested by Fields in column 4 line 36 and column 3 lines 1-9.

Therefore, the combination of the AAPA, Kawamura, and Fields renders claimed invention obvious for that reason and the rejection is proper and maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (see figure 1 and its corresponding text portion on last two paragraphs of page 1 to first two paragraphs of page 3. Referred as the AAPA hereinafter) in view of Kawamura et al. [USPN 5,719,982], further in view of Fields et al. [USPN 6,771,671].

The advanced statements set forth in the preceding paragraph 2 above are incorporated hereinafter.

Regarding claims 1, and 11 the AAPA teaches an apparatus for transmitting a graphic signal generated by a graphic signal generation unit to a display unit [see figure 1 : transmission unit 11, reception unit 12, and display unit 132] the apparatus comprising:

a transmission interface unit which: compares a current graphic signal with a previous graphic signal and compresses the current graphic signal to generate transmission data based on the comparison, modulates the transmission data together with header information into an optical signal for transmission via a single channel; and transmits the optical signal [see transmission unit 11 of figure 1];

a reception interface unit which regenerates a graphic signal based on the transmission data and header information contained in the optical signal and transmits the regenerated graphic signal to the display unit [see reception unit 12 of figure 1].

Art Unit: 2627

While the AAPA teaches a transmission interface unit, the AAPA does not explicitly teach: compares a current graphic signal with a previous graphic signal and compresses the current graphic signal to generate compressed transmission data based on the comparison, modulates the transmission data together with header information into an optical signal for transmission via a single channel. However, such features are well known in the art as evidenced by Kawamura et al.

Kawamura et al. teaches: compares a current graphic signal with a previous graphic signal and compresses the current graphic signal to generate compressed transmission data based on the comparison [see col. 2 lines 54-56], modulates the transmission data together with header information into an optical signal for transmission via a single channel [see MOD 53 of figure 7].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the claimed features as taught by Kawamura et al. in combination with the AAPA in order to effectively increase the compression efficiency as suggested by Kawamura et al. in col. 2 lines 56-57.

While the AAPA teaches transmitting graphic data [see last three lines of page 1], the AAPA does not explicitly teach the use of optical transmission medium as a means for transmitting data. Using optical transmission is well known in the art as evidenced by Fields et al. [see col. 4 lines 35-36 and item 124 of figure 31]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conventional teachings as taught by Fields et al in combination with the AAPA in order to allow faster transmission.

Allowable Subject Matter

5. Claims 2-7-10, and 12-30 are allowed.
6. The following is an examiner's statement of reasons for allowance:

Regarding claim 2, the prior art of record fails to teach the claimed features that of "an apparatus for transmitting a graphic signal generated by a graphic signal generation unit to a display unit, the apparatus comprising: a transmission interface unit which compares a current graphic signal with a previous graphic signal to generate compressed transmission data based on the comparison, modulates the transmission data together with header information into an optical signal for transmission via a single channel, and transmits the optical signal, the transmission interface unit comprising: an image compression processor which outputs the transmission data and the header information based on the comparison, a DC-balancing encoding unit which Dc-balances the transmission data and header information, a serialization unit which serializes the DC-balanced transmission data and header information, to output a serialized signal, and an optical transmission unit which converts the serialized signal into the optical signal and transmits the optical signal to the optical transmission medium; an optical transmission medium which communicates the transmitted optical signal, and a reception interface unit which regenerates a graphic signal based on the transmission data and the header information contained in the optical signal and transmits the regenerated graphic signal to the display unit.

Dependent claims 3-7 are also allowed for the same reasons as above.

Regarding claim 8, the prior art of record fails to teach or suggest the claimed features that of: an apparatus for transmitting a graphic signal generated by a graphic signal generation unit to a display unit, the apparatus comprising:

Art Unit: 2627

a transmission interface unit which: compares a current graphic signal with a previous graphic signal and compresses the current graphic signal to generate compressed transmission data based on the comparison, modulates the transmission data together with header information into an optical signal for transmission via a signal channel, and transmits the optical signal; and

an optical transmission medium which communicates the transmitted optical signal; and

a reception interface unit which generates a graphic signal based on the transmission data and header information contained in the optical signal and transmits the regenerated graphic signal to the display unit, the reception interface unit comprising: an optical reception unit

which converts the optical signal received from the optical transmission medium into an electrical graphic signal,

a de-serialization unit converts the electrical graphic signal into a parallel graphic signal,

a decoding unit which decodes the parallel graphic signal into a graphic signal corresponding to the compressed transmission data and

the header information, and

an image decompression processor which decompresses the decoded signal, regenerates a graphic signal corresponding to the current graphic signal based on the decoded graphic signal and transmits the regenerated graphic signal to the display unit.

Dependent claims 9-10 and 19 are also allowed for the same reasons as above.

Regarding claim 12, the prior art of record fails to teach the claimed features that of: comparing a current graphic signal and a previous graphic signal and generating compressed transmission data based on the comparison...converting the serialized DC-balanced transmission data and header information into the optical signal.

Art Unit: 2627

Dependent claims 13-16 are also allowed for the same reasons as set forth above.

Regarding claim 17, the prior art of record fails to teach the claimed features that of: comparing a current graphic signal and a previous graphic signal and generating compressed transmission data based on the comparison...decompressing the compressed decoded transmission data based on the header information to generate a decompressed graphic signal.

Dependent claim 18 is also allowed for the same reasons as set forth above.

Regarding claim 20, the prior art of record fails to teach the claimed features that of: a processor which compares a current one of the graphic signals with the previous one of the graphic signals and output...an optical converter which converts the one serial bitstream to a serial optical signal.

Dependent claims 21-26 are also allowed for the same reasons as set forth above.

Regarding claim 27, the prior art of record fails to teach the claimed features that of: the serial bitstream comprising...a decompressor which regenerates a graphic signal based on the first parallel bitstream and the recovered header information.

Regarding claim 28, the prior art of record fails to teach the claimed features that of: a first memory...header information comprising information which indicates whether the transmission data comprises the LSBs and MSBs.

Dependent claims 29-30 are also allowed for the same reasons as set forth above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M. Dang whose telephone number is 571-272-7389. The examiner can normally be reached on Monday to Friday from 6:00AM to 2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dmd
3/06



Duy M. Dang
Patent Examiner